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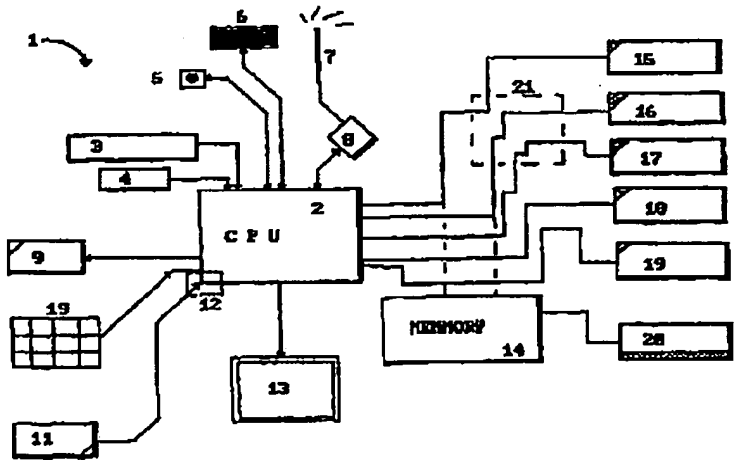
(54) Title: METHOD AND SYSTEM FOR MONITORING AND COMMUNICATING DATA OVER A WIRELESS NETWORK



(57) Abstract

The present invention relates to a method and system for monitoring and recording of data inputs and communicating the data over a wireless network to a computer network of a service provider. In particular the invention includes modular medical censoring and monitoring devices that is linked to a processor for processing the data and communicating the data to a service provider in real time or at a predetermined future data. Furthermore the invention includes processing of the data and displaying the data on the display means of the communication device. Also included within the scope of the invention is the step of associating voice inputs with pre-programmed datasets including numbers of telephone subscribers and certain predefined or preprogrammed instructions.

METHOD AND SYSTEM FOR MONITORING AND COMMUNICATING DATA OVER A WIRELESS NETWORK

TECHNICAL FIELD

The present invention relates to a method and system for monitoring and recording of data inputs and communicating the data over a wireless network to a computer network of a service provider. More specifically the present invention allows for the monitoring and recording of medical data and for relaying it to a computer network of a doctor or medical institution for analysis. Alternatively the data may be used for personal use. By integrating a communication device with a medical monitoring and recording unit users may benefit from an integrated unit comfortably worn around their arm or wrist and use the existing computing and processing capabilities of a processor associated with the device to generate data and report either for the user or a service provider. It is envisaged that users may access data and information from integrated communication technology or protocols such as WAP and Blue-tooth technology.

BACKGROUND ART

With the introduction of electronic medical monitoring packs and wireless systems there has been an increasing need to create an arm or wrist worn device since prior communication devices lacks the ability to be worn in a watch like format and to include medical monitoring and recording means. Furthermore the present invention may integrate mobile communications technology associated with mobile phones either being digital or analogue phones for example operating on a cellular network, with the medical censoring

and monitoring means. Furthermore data and information relating to medical readings may be communicated over the communications network supporting mobile telephoney.

OBJECTIVES OF THE INVENTION

Accordingly it is an object of the present invention to provide a method and system for the monitoring, recording and processing of inputs relating to medical monitoring or censoring and pre-programmed user inputs. It is a further object of the invention to provide a system for and method of monitoring and recording medical data and communicating the data over a wireless network and with which the applicant believes disadvantages of known systems may at least be alleviated.

DISCLOSURE OF INVENTION

According to the first aspect of the invention there is included a system for recording and processing data comprising a sensor interconnected with a processor , the sensor adapted to read inputs from a user, memory means adapted to store data, communication means for relaying the data to a remote location and a computer program stored on the memory means adapted to , on demand , generate a report relevant to the recorded data.

According to the second aspect of the invention the remote location may comprise a computer operated facility of at least a service provider

According to the third aspect of the invention the remote base may comprise a computer of an associated user.

According to the fourth aspect of the invention the method of recording and processing data may include the steps of: providing at least one censoring device interconnected to a processor;

- inputting predetermined subject matter at the censoring device;
- reading inputs from the censoring device and storing same on memory

means provided;

- relaying the subject matter to an associated station at a remote base; and
- generating a report relevant to the subject matter.

According to the fifth aspect of the invention the method may include the step of interconnecting the censoring device to a wireless communication device adapted to facilitate bi-directional communication over a mobile telephone network.

According to the sixth aspect the invention the step of associating the censoring device with a modular unit which may be adapted to be inter-connectable to integrated circuitry associated with the communication device.

According to the seventh aspect the invention the method may include the step of associating the processor with a selection of: the communication device, a modular processor, and an applications module adapted to be integrateable with the communications device

According to the eight aspect the invention the remote base may be that of a service provider selected from: a hospital, a doctor, a medical research facility, a nurse and a

computer network associated with medical applications.

According to the ninth aspect the invention the the report may be generated is a selection of: a summary of a users health, - preprogramed organ and- metabolismic function.

According to the tenth aspect the invention the step the step of generating a report may be executed in relation to the monitoring of an aspect of a users organic functions in a selection of: real time, a predetermined time slot and a predetermined future time.

According to the eleventh aspect the invention the method may include the step of notifying a service provider at the remote base where certain predetermined conditions are met.

According to the twelfth aspect the invention the notification may be conducted as a selection of one of the following, an alarm which is generated at the service provider regrading vital subject matter read by the censor in relation to a predetermined user and furthermore include the step of notifying the user when predetermined conditions are met.

According to the thirteenth aspect the invention the modification of a user may include

an alarm selected from an audio signal and mechanical signal being reproduced by the components of the system.,

According to the fourteenth aspect the invention the when in the notification of a service provider may be conducted by a selection of the following; short message service by cellular telephone technology, conventional call an -data call.

According to the fifteenth aspect of the invention there wherein the method may include the step of notifying of a service provider which includes transmittal of data to a communication device associated with a user selected from: a land line telephone device , a mobile phone device and a paging device and the step of updating a database associated with the service provider according to predetermined user data.

BRIEF DESCRIPTION OF DRAWINGS

Preferred embodiments of the invention will now be described by means of non-limiting examples only, with reference to the accompanying diagrams wherein:

Figure 1 is a simple block diagram of the electronic components of the invention;

Figure 2 relates to a voice recognition system which allows user to use certain pre-programed functions;

Figure 3 relates to the process of recording and updating of medical readings; and

Figure 4 relates to the recording of voice commands and communicating in data format the commands over a wireless network

BEST MODES FOR CARRYING OUT THE INVENTION

Turning to **Figure 1** which is a simple block diagram of the electronic components(1) of the invention consisting of a CPU (2) that may be powered by means of a battery (3) and/or via solar energy (4). Output means may include the display unit or LCD screen (13)and the speaker (9)that may all be connected directly or indirectly to the CPU. Input means may include the keypad (19) and the microphone (11) which may be used directly or via an electronic component or software to do voice recognition (12). The CPU may allow for external communication by means of the aerial (7) directly or via an interface (8). Other forms of external communication is made possible via a cable connection (5) and/or via an Infra Red communication device or interface (6) The unit may also have memory means or modules (14) and/or via a portable storage device i.e. a smartcard (not shown) which may be ungradable (20). Furthermore the invention may include for one or more medical sensors or monitors (15 to 19) may be connected directly to the CPU or memory or via a interface (21) .

Figure 2 relates to a voice recognition system (22) which allows user to use certain functions (23) for example to record (24) a sound wave (26, 29, 31 and 34)) and/or pattern (25) for identification (27) of a person (28) or an organization (29, 30, 32 and 35) which

may be processed by the CPU (37) or interface (38) or be stored on the memory means for processing a function i.e. a call (33) to a doctor (35) which is processed and forwarded (36) for comparison with similar wave forms (40) associated with the identity (41) and phone number for initiating a call (42)

Figure 3 relates to the process (43) of recording and updating of medical readings which may be done on a predetermined bases (47) but not forwarded in real time (45) where each rereading is independently monitored and communicated (48) to the CPU (50) and/or memory (49) of the unit. Furthermore the readings may be processed and be displayed on the display means (51) and/or communicated via the cable and/or IR link to a PC. Also included within the scope of the invention the readings may be communicated via wireless communication means (53) to the user base or to doctor or hospital via one or more of the following; fax (54), SMS (55) and via a data-call (56)

Figure 4 relates to the recording of voice commands and communicating in data format the commands over a wireless network

CLAIMS

1. A system for recording and processing data comprising a sensor interconnected with a processor , the sensor adapted to read inputs from a user, memory means adapted to store data, communication means for relaying the data to a remote location and a computer program stored on the memory means adapted to , on demand , generate a report relevant to the recorded data.

1. A system as claimed in claim 1 in which the remote location comprises a computer operated facility of at least a service provider

2. A system as claimed in claim 1 or 2 in which the remote base comprises a computer of an associated user.

3. A method of recording and processing data including the steps of: providing at least one censoring device interconnected to a processor;

- inputting predetermined subject matter at the censoring device;
- reading inputs from the censoring device and storing same on memory means provided;

- relaying the subject matter to an associated station at a remote base; and
- generating a report relevant to the subject matter.

4. A method as claimed din claim 4 including the step of interconnecting the censoring device to a wireless communication device adapted to facilitate bi-directional communication over a mobile telephone network.

5. A method a claimed in claim 1 or 2 including the step of associating the censoring device with a modular unit adapted to be inter-connectable to integrated circuitry associated with the communication device.

6. A method as claimed in any of the preceding claims wherein the step of associating the processor with a selection of: the communication device, a modular processor, and an applications module adapted to be integrateable with the communications device.

7. A method as claimed in any of the preceding claims wherein the remote base is that of a service provider selected from: a hospital, a doctor, a medical research facility, a nurse and a computer network associated with medical applications.

8. A method as claimed in any of the preceding claims in which the report generated is a selection of: a summary of a users health, - preprogramed organ and-metabolismic function.

9. A method a claimed in any of the preceding claims wherein the step of generating a report is executed in relation to the monitoring of an aspect of a users organic functions in a selection of: real time, a predetermined time slot and a predetermined future time.

10. A method a claimed in any one of the preceding claims including the step of notifying a service provider at the remote base where certain predetermined conditions are met.

11. A method as claimed in claim 11 in which the notification is conducted as a selection of one of the following, an alarm is generated at the service provider regrading vital subject matter read by the censor in relation to a predetermined user.

12. A method as claimed in any one of the preceding claims including the step of

notifying the user when predetermined conditions are met.

13. A method as claimed in claim 13 wherein the modification of a user includes an alarm selected from an audio signal and mechanical signal being reproduced by the components of the system.

14. A method as claimed in any of the preceding claims when in the notification of a service provider is conducted by a selection of the following; short message service by cellular telephone technology, conventional call an -data call.

15. A method as claimed in any of the preceding claims wherein the step of notification of a service provider includes transmittal of data to a communication device associated with a user selected from: a land line telephone device , a mobile phone device and a paging device.

16. A method a claimed in any one of the preceding claims including the step of updating a database associated with the service provider according to predetermined user data.

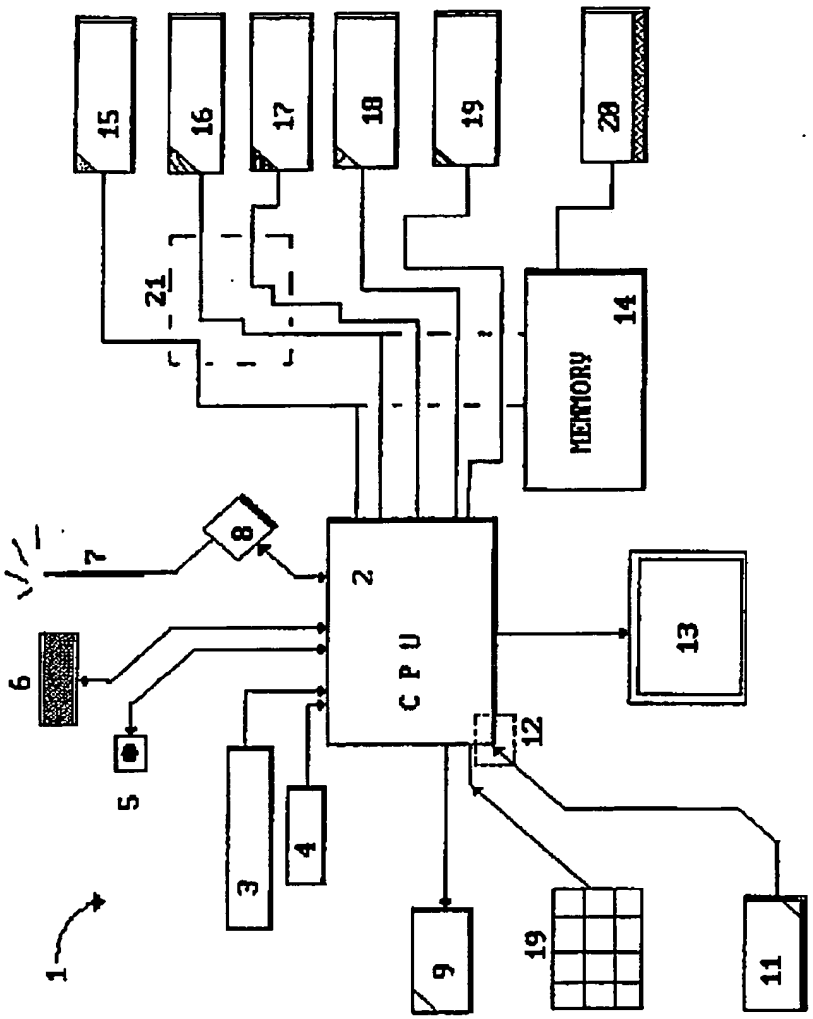
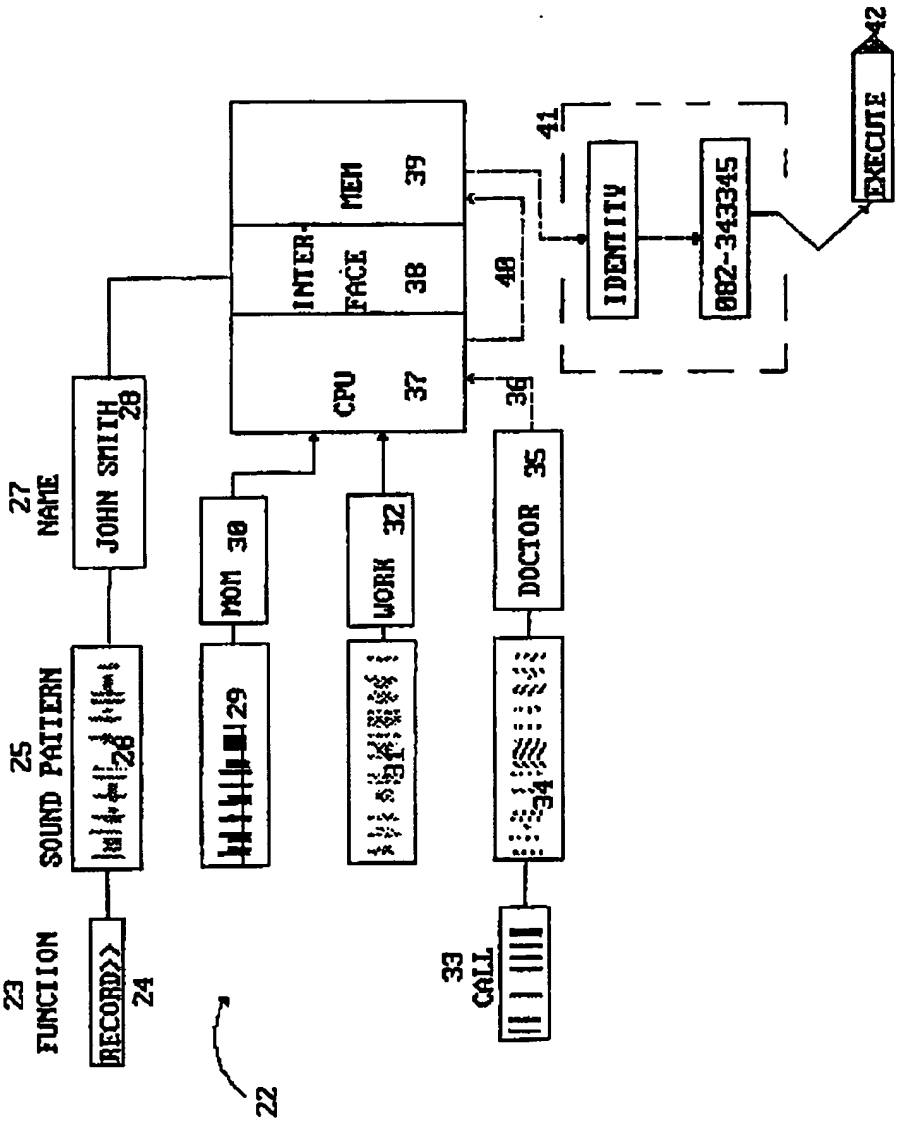


FIGURE 1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EXECUTE
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IDENTITY
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MEM 39
INTER FACE 38
CPU 37
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36
DOCTOR 35
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WORK 32
MOM 30
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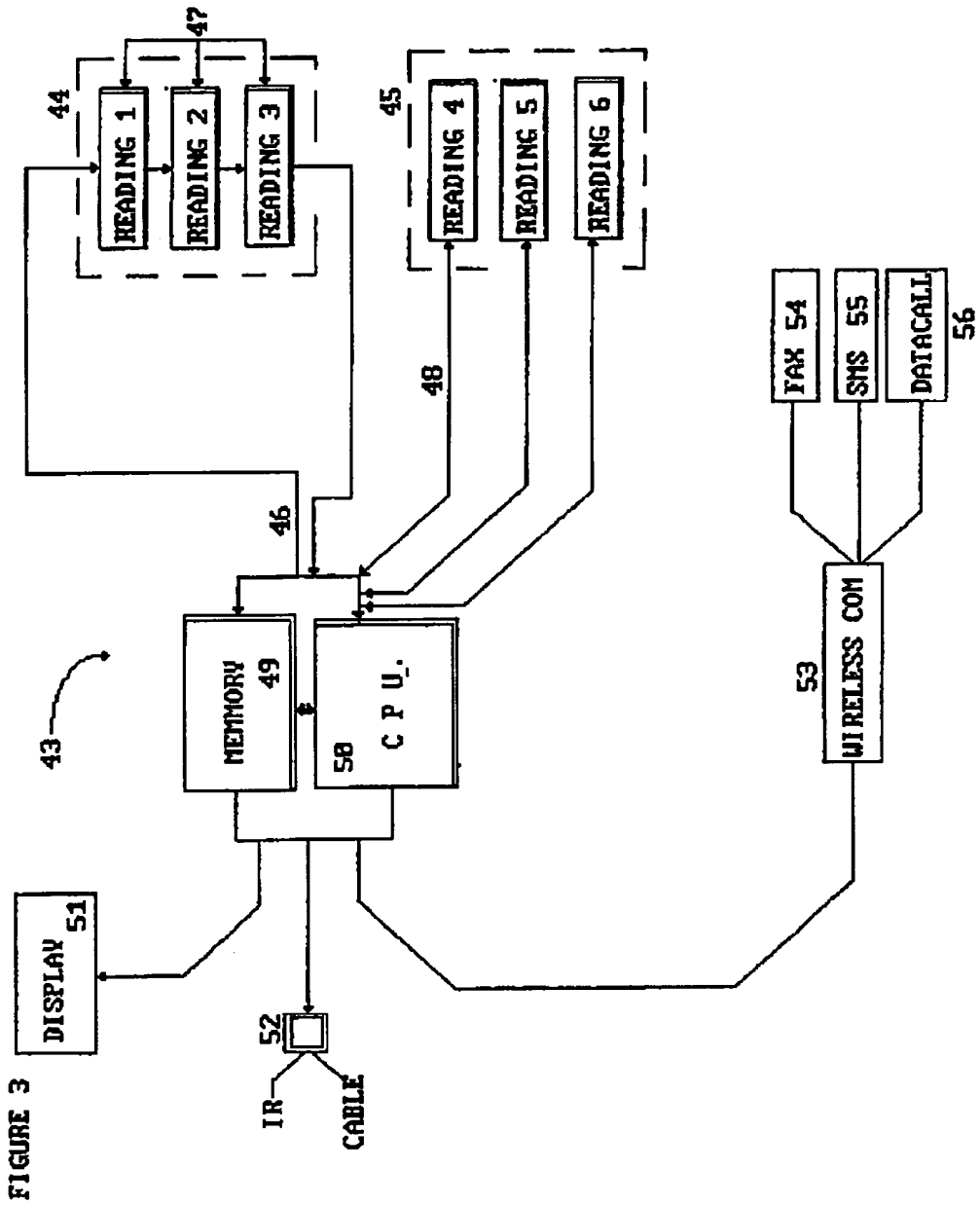
JOHN SMITH 28
27 NAME
25 SOUND PATTERN
23 FUNCTION
RECORD>> 24
33 CALL
22

FIGURE 2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READING 2
READING 3
45
READING 4
READING 5
READING 6
48
46
FAX 54
SMS 55
DATACALL
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MEMORY
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C P U.
58
53
WIRELESS COM
DISPLAY
51
52
IR
CABLE

FIGURE 3

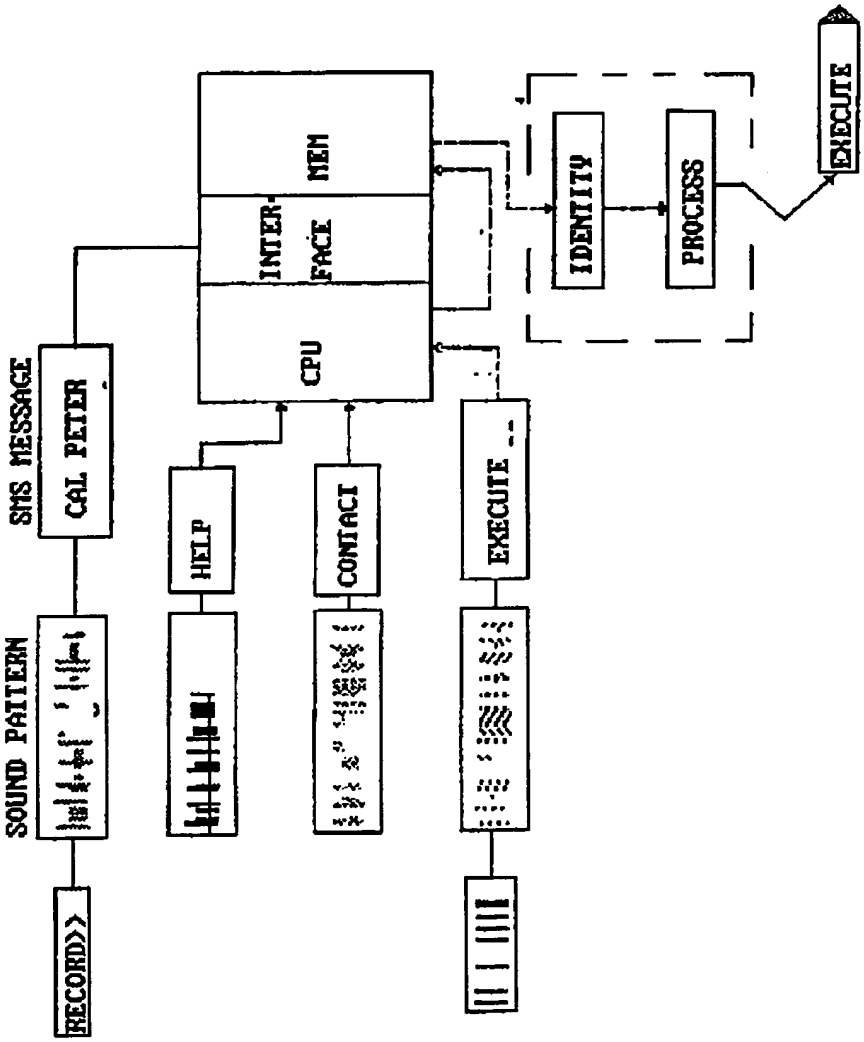
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FIGURE 4